GALTON AND MID-CENTURY EUGENICS

By FREDERICK OSBORN

Science Since Galton

SINCE the turn of the century there have been extraordinary developments in two fields of science which were close to Francis Galton's heart. In genetics, Mendel's work was rediscovered, and a great science established, in what has undoubtedly been one of the triumphs of the human mind. In the social sciences, in which no figure of Galton's stature has appeared since his time, and to which he contributed the principle of correlation, and the application of Zuetelet's curve of normal distribution, the advances have been substantial but less spectacular.

It was on the advancement of these sciences that Galton based his hopes for an effective eugenics. The best tribute we can pay him, on this, the 134th anniversary of his birth, is to consider what would have been his views on the development of eugenics in the light of our new scientific knowledge.

Galton, who died in 1911, would have been fascinated with the last half century's progress in the science of genetics which had become a subject of controversy during the last few years of his life. He would have given his powerful backing to the further advancement of human genetics. He would have been present at the First International Congress of Human Genetics to be held in Copenhagen this summer. He would have urged exhaustive studies on the identification of carriers of harmful recessive genes. He would have supported heredity clinics.

Galton would have been disappointed in the little progress that has been made since his time in the study of the genetic factors which affect the development of personality and intelligence. He would have been surprised that we to-day know so little more than he did about the relative contributions of heredity and environment in the development of the subtle differences in the characteristics which distinguish men and women of unusual ability. I think he would have urged that we should not wait till scientific knowledge was complete, but should look for acceptable eugenic policies to put into effect during our own lifetimes.

I am sure Galton would have been pleased with the methodologies of modern psychology, in which he was one of the great pioneers. The use of the blood groups in anthropology would have stirred his imagination. The application of the new measures for the selection and training of personnel now so widely used by governments and in industry would have seemed to him to realize some of the high hopes he expressed in the studies which he carried on throughout his own lifetime. The new methods for gathering objective data on individual and group attitudes and motivations, and their statistical analysis, would have provided him with tools for working on some of the possible applications of science to human affairs and to human beings. I think he would have been appalled to find that the major investments of brains and money were being spent in the physical sciences to the neglect of the sciences having to do with man. He would have been one of the first among us to recognize that the social sciences require work with large numbers over a long period of time to achieve results in any way comparable to the results achieved in physics and chemistry. He would have been disheartened that pure research, that is, research without any immediate practical aim, was being carried out on

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an enormous scale by governments and industry in the fields of medicine and of all the physical sciences, while the social scientist was limited, with few exceptions, to minor projects having some immediate practical purpose.

We can put forward with some confidence that these would have been some of Galton's reactions if he were suddenly to appear among us to-day. But we have not answered the major question : How would he have applied to-day's new knowledge and new circumstances to the major problems of eugenics which held first place in all his thought ? It would be assuming the powers of his genius for anyone of us to say what he would have proposed. But we can be sure that he would have reoriented his thinking wherever the findings of science required it.

Indications of the New Sciences

We must start, I think, with a premise that would have been new to Galton. The studies made since his time do not indicate major differences in genetic potential for intelligence and the development of personality between any of the large socio-economic groups or between the different races of man. These groups may differ in their average of genetic capacity, but if they do the differences are too subtle for us to distinguish by any scientific methods at present available. Even if the average should be found to be higher in one group than in another, the overlapping must be very great. Genetic capacities are certainly distributed among the individuals in such groups in a normal curve of distribution, as Galton was the first to point out. A process of selection based on socio-economic or racial groups, which failed to take into account individual variations within groups, would be impractical because it would not supply enough births for replacement, and unsound because it would miss too many able stocks. We need the greatest possible number of births among genetically superior individuals, whether they are among the able individuals who are the majority in one group or among the able individuals who are the minority in another group. Since eugenics is not concerned with reducing the birth rate as a whole, a sound process of purely genetic selection would have to reach into every socio-economic and every racial group to seek out the genetically valuable individuals and attempt to increase their rate of births, concurrently with the attempt to reduce births among the less valuable. The practical and scientific aspects of this matter are, I think, so well established as to leave us no reasonable alternative. I believe Galton would have agreed that not group, but individual differences must be the basis of eugenics.

In Galton's time death differentials still played an important part in selection. But to-day in European countries 95 per cent of the children born alive survive to reach the age of reproduction. The deaths of the five per cent who do not survive are undoubtedly highly selective against physical abnormalities and weaknesses, but they are certainly not selective for the higher qualities with which we are particularly concerned. To-day the processes of selection affecting man's higher qualities operate not through deaths, but through differentials in the number of children born to people of different genetic types.

Under these conditions fanciful utopias have been proposed, in which there would be an arbitrary selection, by government or other authority, of those who should have children, based on some agreed on measures of quality. There are many reasons why such proposals are repugnant to thoughtful people. Western ideals would not permit of such an abrogation of individual responsibility ; no man or group of men can be trusted to decide who should and who should not have children ; even if our scientific knowledge were far greater than it is or is likely to be, there are questions of values here which no man is fitted to determine.

Galton never envisaged any system of arbitrary controls, except for the more serious mental and physical genetic handicaps, which should be treated like a form of communicable disease. But he did propose that we should attempt to assign eugenic

value to particular people, and single them out for rewards for having children. The values he proposed related to health, intelligence and fine qualities of personality. They are generally accepted. No one could object to them. Yet somehow the idea of designating certain people as desirable progenitors of the next generation, and rewarding them for having children, has never found acceptance. It has not been neglected. Others have worked on it since Galton's time, and it has been quite constantly before the public in one way or another. But it seems to arouse more indignation than sympathy, and more ridicule than serious consideration. I believe that Galton would have recognized by now that public opinion was pretty well fixed in this matter.

This opposition does not seem reasonable to the eugenist. He recognizes more than others that the conditions of modern life may bring about a genetic degeneration of the race ; he feels perhaps more deeply than others the need for genetic improvement and the possibility of accomplishing it. But the public in general is less willing to accept the idea that any individuals are genetically superior. In the United States they say that there is no mother who does not sometimes think that her son might become President. It is a fine and universal human trait for a mother to have such aspirations. Indeed she has considerable support from science which has pointed out the heterogeniety of the human race and the infinite complexity of human inheritance. The genetic odds may favour one mother far more than another, but in races, horse or man, it isn't always the odds on favourite which wins.

My own feeling is that if eugenics is to make any progress in the foreseeable future, we will not only have to drop the idea of assigning genetic superiorities to social or racial groups, but we will even have to stop trying to designate individuals as superior or inferior. To many eugenists this would seem a radical step, almost the abandonment of eugenics. But a little consideration will show that there are means of selection which do not require that we humiliate one half of the individuals who comprise the human race by telling them that they are not as fit as the other half to procreate the next generation.

Practical Eugenics Programme

In the latter part of his life Galton urged the study of " forces under social control " which would influence the distribution of births. He himself analyzed the effect on survival of differences in age at marriage ; he pointed out the effect of the celibacy required of scholars by the colleges. To Galton these were examples of social forces which brought about a voluntary and quite unconscious though adverse form of selection.

Other studies of forces which affect selection have been made more recently. They were at first concerned with the effect of birth control and its differential use among socio-economic groups. All these studies reached the same conclusion : namely, that differences in the birth rates of different socio-economic groups were directly related to the practice and effectiveness of contraception. Both in England and in the United States contraception was first introduced among the wealthier and better educated classes, and resulted in widening class differentials. As the use of contraception spread downward through the entire population, the differentials have tended to narrow. Contraception, a " force under social control," greatly influences group differentials in rates of birth.

Differences in size of family as between individual couples appeared to vary in the past inversely with income. But in the early nineteen-thirties Eden in Sweden began publishing studies indicating that above a certain income level, (presumably those practicing birth control), the size of individual families varied directly and not inversely with income. Further studies appeared to confirm this finding. The largest study of this sort was the " Study of the Social and Psychological Factors Affecting Fertility " carried out in Indianapolis and reported in the Milbank Fund *Quarterly*.

Because of the size of the sample in this study, it was possible to make an analysis of births among several hundred couples all of whom could be recorded as practicing family planning effectively. In this family planning group, the rate of births was much below the rate required for replacement, but the number of children per couple was directly related to income. Those couples with the lowest incomes had the fewest children, and size of family increased with each increment of a thousand dollars per year of income, the couples with the most children being those with the highest incomes. I believe we can now assume that the ideal of planning family size, coupled with effective means of preventing conception, constitutes " a force under social control " which permits individual couples to respond to the varying pressures of the environment with a considerable variation in size of family ; and that among such couples economic pressure tends to reduce the number of children.

We still have much to learn, but it seems fairly certain, subject to confirmation by further studies, that when family planning has spread to all elements of the population, and means of effective contraception are readily available to all, couples will tend to have children in some proportion to their ability to give them proper care. The present evidence permits us to speak only of their economic care. But there seems to me every reason to believe that other aspects of ability to care for children are also involved. Given equal economic security, it can be assumed that parents who have the vitality, the patience, the character, the human sympathy, the affection and the intelligence to give their children the kind of care most valuable for their development will, under favourable conditions of the environment, be found to desire and to have more children than parents who do not have as much of these qualities.

Such an assumption is subject to two important conditions : means must be found to make early marriage and children economically possible to ambitious young people, and the influences of the early environment must be such as to provide the proper psychological conditioning for parenthood. By this I mean that the parents of the future should be exposed from earliest childhood to influences which will tend to increase the desire for children, and will increase this desire most among individuals with the ability to give their children the kind of affectional and intelligent care we have indicated. These psychological influences would have to be selective ; that is, they would have to have more effect on potentially good parents than on potentially poor parents. But it does not seem impossible to find influences which are selective. In the case of intelligence, the more intelligent people are, the more susceptible they are to influences which arouse their intelligence. It does not seem unreasonable to believe that psychological influences can be found which will have the same selective effect on traits of personality, and will tend to increase qualities of affection, sense of responsibility, and interest in others, in proportion to the potential of each individual for developing these traits. We are assuming that we can find " forces under social control " which when incorporated into the environment, would have a selective effect on size of family.

Perhaps the greatest handicap to the effectiveness of a selective environment of this sort would be the tendency of people everywhere to conform to the current fashion, which seems to apply to size of family as well as to size of bustle, design of clothes, or other matters of taste. The Indianapolis study which was made during the depression, found almost no families of more than three children among these moderate income, urban, educated people practicing contraception. To-day with a higher birth rate, there is a greater variation in size of family and a substantial proportion of families of four or five children. To maintain an effective selection of births it would be important to develop a public opinion which would not expect couples to have a particular number of children, but which would find it entirely natural for some couples to have large families and others small families or no children at all, depending solely on

their own choice or taste in the matter.

Fortunately a process of selection, to be effective, does not have to be exact. It is enough if the general trend is in the right direction. That was certainly the case with natural selection, and we should be content if it is the case with the kind of man-made selection now being considered.

The most immediate and notable effect of this kind of selection would be environmental ; a rapid increase in the proportion of children brought up in homes which would give them the best affectional care. This would be the most effective argument for getting such a programme accepted. Everyone is anxious to improve the home environment in which children are brought up, and of course the easiest way to do so is to have the children born in the homes which provide the best environment. These proposals should therefore, when properly understood, have the enthusiastic support of the public, which everywhere wants to see children brought up in better home environments. There is here no interference with individual choice as to size of family. There is no question of assumed superiority or inferiority ; indeed the eugenic question need not be raised, and it would probably be better not to raise it. The results of this environmental selection would be apparent in the first generation brought up in the better environments, and should be cumulative thereafter.

We have at present no scientific studies to tell us whether this environmental improvement would result in a corresponding genetic improvement, or if not, whether it could be modified in such a way as to bring about a genetic improvement. But there are good *a priori* grounds for believing it would raise the genetic average.

Since at present we lack knowledge of the genetic components underlying intelligence and personality and of the methods by which these components are transmitted, a certain number of geneticists will object that such a selection is not in any way related to eugenics. But by their own admission they have no evidence to prove this negative. It is a negative which logically does not make much sense. I think that most of us would be content if we felt that the individual couples throughout the nation who provided their children with the most intelligently planned, the most affectional, and the most responsible care, were having the largest families. It is hard to see how such a trend could be dysgenic. Until the science of human genetics is very much advanced it is the only kind of broad, overall selection we can work for. If we can succeed in giving direction to the social forces which will effect this kind of environmental selection, we will be better equipped to direct them to a specifically genetic selection as soon as the necessary genetic information is available.

Advantages of the Broad Programme of Selection

There are a number of practical advantages in this proposed method of selection. First of all is the fact that with the advent of family planning, there seems already to be a trend in this direction. We would be working with the tide instead of against it. Equally important is that such a process of selection would make for great diversity, and thus avoid one of the most justified criticisms directed at eugenics. Finally, a process of selection based on early success in responding to the environment would be democratic ; lack of parental support would be no bar to early marriage among scholars, artists, and others headed towards the professions. Those who had to fight their way up would have an equal chance at raising a family. It should therefore enlist the solid support of public opinion, to an extent not possible with any proposal for a solely eugenic selection.

The proposal we have been discussing develops out of common sense and would be put forward on the ground that more children would grow up in the best home environments, with no public argument made for eugenics. I think that Galton, if he were here with us to-day, and had reviewed the history of the eugenic movement since his death, would endorse such a proposal. He

was an eminently practical man. He believed we could take a lesson out of the evolutionary processes of the past. The present proposal, except that it is necessarily based on births rather than on deaths, provides, in the manner of natural selection, for the survival of those who are best adapted to the requirements of modern civilization. I doubt that Galton would have viewed it with the scepticism that is expressed by some geneticists to-day.

This programme meets the requirement that a process of selection should sort out individuals throughout the whole population. It makes a beginning, and it has the advantage that as our scientific knowledge increases and public opinion is increasingly informed, it can be more and more directed to a genetic as well as an environmental selection. Already enough is known of medical genetics to make it almost obligatory that we should set up heredity clinics in connection with medical schools and marriage counselling services. Galton would, I believe, have adopted the view now generally held, that heredity counselling should not go beyond advising on the degree of risk of defective heredity, leaving it to the parents themselves to decide whether or not it is to their interest and that of society to run this risk. He would have hoped that by educating the public through such services, individual parents, backed by public opinion, would increasingly hesitate to run the risk of bringing defective children into the world. The public education resulting from the use of heredity clinics should develop a eugenic awareness which would make the public more understanding of eugenic measures, and individual couples more anxious to play a eugenic part.

Galton clearly saw that eugenic policies would fail unless geared to " existing conditions of law and sentiment."

I doubt whether, at the present time, he would have gone beyond these specific proposals. I think they would have seemed to him sufficient for a start on which to build a eugenic form of society. I have no doubt that he would have put the whole force of his position behind these proposals.

Research

Even such a limited programme of eugenics needs the support of continuing research. A larger proportion of able young men should be encouraged to enter the field of medical genetics and be trained in both genetics and medicine. Medical and genetic research would both be advanced by setting up genetic registers such as those already established in a number of Scandinavian countries. More medical schools should teach and conduct genetic research.

The study of human genetics is at a critical point from which it may make rapid advances if it receives proper support. Professional societies of human geneticists have been established in a number of countries, and for the first time there are scientific journals devoted exclusively to this field. The first International Conference of Human Genetics is being held this summer at Copenhagen. There have been great advances since the war. But the ablest of the younger men seldom go into human genetics, nor indeed into the various fields of the social sciences. They are still going into the physical sciences, and until this condition is changed our knowledge of human beings is not going to advance as it should.

Genetics and social science meet in the study of the relative parts played by heredity and by environment in the development of individual differences. No field of knowledge is more important to eugenics. A scientific knowledge of how individual differences develop would be a great stimulant to education, to job selection, and to almost every phase of human activity. It seems amazing that so little serious work is being done on this subject. In this field the studies of twins in which Galton was so great a pioneer should be pushed with renewed vigour. A longitudinal study of identical and fraternal twins, comparing them with each other, with their brothers and sisters, with foster children, and with unrelated pairs, and carried out over a long period of time, would, I think, change public attitudes in a great variety of ways, and give us an entirely new base for the development of eugenic policies.

Only a few studies have reported on size of family in relation to the measured personal qualities of the parents. But there is now under way in the United States a major study, successor to the Indianapolis study, which among other things will attempt to determine relationships between size of family and the personal qualities of the parents. The outline of this study is reported in the *Eugenics Quarterly* for December, 1955. In using measures of personal qualities, this study will not attempt to separate genetic differences from differences in intelligence and personality caused by the environment. Here we must, for the present, rely on the rather general indications given us by studies on the relationships in intelligence and personality between parents and own children versus parents and foster children, and particularly on the twin studies. All of these indicate a correlation between developed qualities and the genetic base.

Finally, further practical advances in eugenics require intensive study of all forces "subject to social control" which may affect size of family. Such studies are wholly in the field of the social sciences. They are most immediately useful in countries where information is needed as to the best means of reducing a too rapid rate of births. But these studies do not now provide information on how to make the birth rate selective. It should not be too difficult to include in such studies an investigation of the differential effects of various environmental factors on different types of couples. This information would be valuable for many purposes, and particularly to indicate trends of significance, and for developing eugenic principles. It seems clear that the advance of programmes which would make for selection based on personal qualities of intelligence and character must go hand in hand with advances in studies on social and psychological motivation.

Conclusion

It is eighty-six years since Galton published his *Hereditary Genius;* eighty-six years since he gave us the hope that the average of human intelligence and character could be raised to the level of the upper five or ten per cent to-day; since he envisaged the eugenic movement as something that would sweep the world and make man at last the master of his own destiny on earth. It has not happened. The eugenic movement is nothing but a few small handfuls of men in various countries; here in England, in the United States, in India, in France. They are not influencing public opinion. The very word eugenics is in disrepute in some quarters. Yet I still believe in Galton's dream. Probably most of you do. We must ask ourselves, what have we done wrong?

I think we have failed to take into account a trait which is almost universal and is very deep in human nature. People simply are not willing to accept the idea that the genetic base on which their character is formed is inferior and should not be repeated in the next generation. We have asked whole groups of people to accept this idea and we have asked individuals to accept it. They have constantly refused, and we have all but killed the eugenic movement.

People will accept the idea of a specific hereditary defect. They will go to a heredity clinic and ask what is the risk of our having a defective child. They balance that risk against the chance of their having a sound child, and they usually come up with a pretty sound decision. But they won't accept the idea that they are in general second rate. We must rely on other motivation.

Given the right circumstances, people will have children in proportion to their ability to care for them. If they feel financially secure, if they enjoy accepting responsibility, if they have warm affectional responses, if they are physically strong and competent, they are likely to have large families, provided they have a reasonable psychological conditioning to this end. If they are unable to feed the children they have, if they are afraid of responsibility, if their affectional responses are weak, people don't want many children. If they have effective means of family planning, they won't have

many. Our studies have shown this to be true all over the world. On such a base it is surely possible to build a system of voluntary unconscious selection. But the reasons advanced must be generally acceptable reasons. Let's stop telling anyone that they have a generally inferior genetic quality, for they will never agree. Let's base our proposals on the desirability of having children born in homes where they will get affectionate and responsible care, and perhaps our proposals will be accepted.

It seems to me that if it is to progress as it should, eugenics must follow new policies and state its case anew, and that from this rebirth we may, even in our own lifetime, see it moving at last towards the high goals which Galton set for it.